

### **REMARKS**

Applicants appreciate the Examiner's thorough consideration provided the present application. Claims 1, 3, 5-34, 36-39 and 44-46 are present in the application. Claims 1, 3, 5-34, 36-39, 44 and 45 have been amended. Claims 2 and 35 have been cancelled in this Reply. Claim 46 has been added. Claim 1 is independent. Reconsideration of this application, as amended, is respectfully requested.

### **Drawings Objections**

The drawings have been objected to due to the lack of a legend in FIGs. 4-10 such as "Prior Art." Applicants respectfully disagree.

In particular, although Boolean Decision Diagram (BDD) is well known, *using the BDD to represent the rules in a Directed Acyclic Graph (DAG) to configure an apparatus is not well known in the art.* Although the specification discloses that BDD has a well known graphical representation and Figure 5 is an example of the graphical representation, this does not mean that Figure 5 is prior art. In fact, Figure 5 is an example to exemplify a BDD *representing the domain constraints.* In other words, although BDD itself is well known, applying the *domain constraints* to the well known BDD to generate a graphical representation *embedded with the domain constraints* (i.e., the rules) is not well known in the art.

As mentioned in the Amendment dated January 8, 2008, as disclosed on page 15, lines 20-30 of the specification, FIG. 4 shows a PC Example, exemplifying a BDD *representing the third rule*; FIG. 5 shows another PC Example, exemplifying a BDD *representing the domain constraints*; FIG. 6 shows another PC Example, exemplifying a BDD *representing the rules*;

FIG. 7 shows another PC Example, exemplifying a BDD *representing the rules and the domain constraints with both public and private variables included*; FIG. 8 shows another PC Example, exemplifying the virtual table with a BDD *representing the rules and the domain constraints, and with only the public variables included*; FIG. 9 shows another PC Example, exemplifying a BDD *representing consistent configurations under the selection of the Seagate-Barracuda-9-9, 1 GB harddisk*; FIG. 10 shows show another PC Example, exemplifying *the virtual table where all variables except X0 and X1 is existentially quantified out*. In other words, FIGs. 4-10 of the present application applying different rules to the BDD to generate different graphical representations *embedded with different rules for configuring an apparatus*, which are clearly not prior art as the Examiner alleged.

The drawings have also been objected to under 37 C.F.R. § 1.83(a). Since claim 35 has been cancelled, this objection has been obviated and/or rendered moot.

Reconsideration and withdrawal of this objection are respectfully requested.

### **Claim Objections**

Claim 1 has been objected to due to the presence of minor informalities. In view of the foregoing amendments, in which the Examiner's helpful suggestions have been followed, it is respectfully submitted that this objection has been addressed. Reconsideration and withdrawal of this objection are respectfully requested.

### Claim Rejections Under 35 U.S.C. §112

Claims 45 stands rejected under 35 U.S.C. § 112, first and second paragraphs. These rejections are respectfully traversed.

The Examiner questioned whether the recitation “at least one of the alternatives of the current component is compatible with the other selected alternatives respectively for the other chosen components and is compatible with at least one of the alternatives in each of yet-to-be-chosen components” as set forth in claim 45 means that the solution is always compatible. Applicants respectfully submit that the one of the features of the present invention is that the process of configuring an apparatus can be conducted in such a way that the process is not running into a dead end. In other words, it is *guaranteed* that at least one compatible alternative exists for each of the "yet-to-be-chosen" components *as long as at least one alternative for a component can be selected*.

Therefore, *once an alternative for a component is selected*, this alternative for this component is guaranteed to be compatible with the other *already selected* alternatives of the components, and is also guaranteed to be compatible with at least one the alternatives in *each of yet-to-be-chosen components*. For example, when the 500 MB Seagate hard drive is selected, it is guaranteed that the 500 MB Seagate hard drive is compatible with the already selected Intel Centrino processor, and is compatible with at least one of the motherboard alternatives, *although the motherboard alternative is not selected yet*. This feature can *guarantee* that *at least one solution (i.e., an apparatus with selected alternatives for each of the components)* will exist no matter what alternatives the user selects as long as at least one alternative for a component can be selected. *This is because the rules relating to compatibilities between alternatives from different*

*components have been defined and represented the rules in the DAG, thereby guaranteeing that at least one solution exists as long as at least one alternative for a component can be selected.*

In other words, the possible solutions (represented by the *paths* from a topmost node to a bottommost node of the DAG) have been determined when the rules are defined and applied to the available alternatives for the components.

Although it is possible that there may be no solution for an apparatus configuration based on the available alternatives for the components, if this occurs, no alternative for any component can be selected *at the very outset*. In other words, no path from a topmost node to a bottommost node of the DAG exists. However, *as long as at least one alternative for a component can be selected*, it means at least one path from a topmost node to a bottommost node of the DAG will pass through a node representing this selected alternative of a component. In other words, the claimed process can *guarantee that at least one solution (i.e., an apparatus with selected alternatives for each of the components) will exist* no matter what alternatives the user selects thereafter because at least one path from a topmost node to a bottommost node of the DAG exists.

In view of the above, all claims are definite and clear and comply with the written description requirement. Reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, first and second paragraphs, are therefore respectfully requested.

### **Claim Rejections Under 35 U.S.C. § 101**

Claims 1-3, 5-39, 44 and 45 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. This rejection is respectfully traversed.

The Examiner alleged that the limitations of the claims are directed to an abstract idea and that there is no practical application by physical transformation to produce a result. Applicants respectfully disagree.

As mentioned, *as long as at least one alternative for a component can be selected*, the claimed process can *guarantee* that *at least one solution* (*i.e.*, an apparatus with selected alternatives for each of the components) will exist no matter what alternatives the user selects thereafter. Therefore, there is no uncertain result as the Examiner alleged. In other words, the claimed invention can produce a useful, tangible and concrete result.

In addition, the Examiner alleged that the “product” is not restricted to any field of application. In this Reply, claim 1 and its dependent claims has been amended to replace the term “product” with --apparatus-- so that the claimed invention is directed to at least one practical application within the technological arts, *i.e.*, *configuring an apparatus* to produce a useful, concrete and tangible result, *i.e.*, *“the apparatus being configured using all of the selected alternatives for all of the components”* as recited in claim 1.

In view of the above, since all pending claims fall within at least one of the four enumerated categories of patentable subject matter, or in alternative, are directed to at least one practical application of a 35 U.S.C. §101 judicial exception, it is believed that all pending claims are directed to statutory subject matter. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 101 are respectfully requested.

**Claim Rejections Under 35 U.S.C. §§ 102 & 103**

Claim 35 stands rejected under 35 U.S.C. § 102(e) as being anticipated by Polish, U.S. Patent No. 6,430,531. Claims 1-3, 5-34, 36-39, 44 and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lynch, U.S. Patent No. 5,515,524 in view of Applicants' own disclosure. This rejection is respectfully traversed.

First, it is respectfully submitted that the 102(e) rejection to claim 35 based on Polish alone is improper. In particular, since claim 35 depends from claim 1, it is improper to reject claim 35 based on Polish alone without relying on Lynch.

With regard to Applicants' own disclosure, the Examiner interpreted the individual points in Applicants' own disclosure in a manner not in accordance with the facts of the case. Those parts of Applicants' own disclosure are used to describe how Applicants have reached to the recognition of the present invention, and therefore describe the invention process as a continuous process from recognition of a problem and use of different naturally each well-known partial components, which are put together in a new and inventive way in order to arrive at the present invention. Again, although Applicants in the specification acknowledge that BDD/DAG is well known, *applying the rules for configuring an apparatus* to the well known BDD/DAG to generate a graphical representation *embedded with the rules, and using this to configure an apparatus*, are not well known in the art.

As argued in the Amendment of January 8, 2008, in the present invention, the rules represented in the DAG is used for *checking for compatibilities* (as explained, e.g., in the specification page 41, lines 20-24). Lynch nowhere discloses using the tree structure in FIG. 2 to check the compatibilities when configuring an apparatus. FIG. 2 of Lynch simply is a

functional hierarchy which only defines the function that a component performs and cannot provide the ability to daisy chain components (see also col. 4, lines 9-51). Lynch nowhere discloses that the compatibility rules are represented by the functional hierarchy shown in FIG. 2 of Lynch.

Furthermore, since FIG. 2 of Lynch simply is a functional hierarchy which only defines the function that a component performs, applying a non-tree DAG (*i.e.*, the DAG including at least one node having at least two pointers pointing to the node) to FIG. 2 of Lynch does not make any sense. As shown in FIG. 2 of Lynch, the higher level of the tree represents a generic (*e.g.*, memory 34), and the lower level represents species (*e.g.*, memory chip 42 and memory upgrade 43) of the generic. If a non-tree DAG were to apply to the tree structure of Lynch, the lower level could no longer represent species. Therefore, one skilled in the art would not have the motivation to modify Lynch's functional hierarchy in view of the DAG, not to mention the fact that neither Lynch nor the DAG itself teaches "representing the rules in a Directed Acyclic Graph (DAG)" to configure an apparatus and "checking the DAG whether the selected alternative is compatible with other selected alternatives of other chosen components" as recited in claim 1.

*Applicants also respectfully submit that the Examiner did not respond on the merits to the substance of each of the arguments presented by Applicants in the Amendment of January 8, 2008, traversing the 103 (a) rejection of record.* In particular, the Examiner did not indicate how one skilled in the art would have the motivation to apply the DAG to Lynch's functional hierarchy, in view of the fact that applying a non-tree DAG (*i.e.*, the DAG including at least one node having at least two pointers pointing to the node) to FIG. 2 of Lynch does not make any

sense. The Examiner also ignored Applicants' arguments that neither Lynch nor the DAG itself teaches "representing the rules in a Directed Acyclic Graph (DAG)" to configure an apparatus and "checking the DAG whether the selected alternative is compatible with other selected alternatives of other chosen components" as recited in claim 1.

It is respectfully submitted that MPEP §707.07(f) requires that the Examiner respond on the merits to the substance of each of the arguments presented by applicants traversing rejections of record. If the Examiner persists in maintaining the 103(a) rejection, Applicants respectfully request that the Examiner respond on the merits to the substance of each of the arguments presented by applicants traversing the 103(a) rejection of record.

Since neither of the utilized references individually or in combination teaches or suggests the limitations of independent claim 1 or its dependent claims, Applicants respectfully submit that claim 1 and its dependent claims clearly define over the teachings of the references relied on by the Examiner.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103 are respectfully requested.

#### **Additional Claim**

Claim 46 has been added for the Examiner's consideration. Applicants respectfully submit that claim 46 is allowable due to its dependence on independent claim 1, as well as due to the additional recitation included in this claim. Favorable consideration and allowance of additional claim 46 are respectfully requested.



### CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject the claims, but merely to show the state of the prior art, no further comments are necessary with respect thereto.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.


In the event there are any matters remaining in this application, the Examiner is invited to contact Cheng-Kang (Greg) Hsu, Registration No. 61,007 at (703) 205-8000 in the Washington, D.C. area.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicants respectfully petition for a three (3) month extension of time for filing a response in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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